

Abstract

Method and apparatus for installing a liner material into a host conduit such as, e.g., a sewer pipe, hydrocarbon pipeline, gas line, water line, industrial chemical pipe, or a saltwater line. The liner material may include a compression liner and/or a preliner that is attached to the inner wall of the host conduit to repair or reinforce the host conduit or separate the host conduit from materials transported within the new liner formed from the liner material. Curable resin, slurry, or cement can be placed between the liner material and the host conduit to affix the liner material into place. Before and during curing, a fluid such as air or water can be used to inflate the compression liner outwardly toward the host conduit. Spacers positioned between at least a portion of the liner material and the host conduit may be used to (i) calibrate the thickness of the liner material and curable material that is cured to form the new liner, and (ii) form communication channels adapted to house devices such as wire, cable, fiber optic cable, telephone lines, power lines, etc. The spacers and channels can be selectively inflatable to various sizes to allow calibration of the liner thickness and to form communication channels having a selected width or height. Additionally, the liner material may be formed into a one-piece, tubular lining member having an inflatable enclosure defined between an inner and an outer layer of the lining member. The enclosure can be selectively inflated to (i) calibrate the resulting thickness of the cured liner material, and (ii) form communication channels running along the length of the host conduit.